

**METHOD AND APPARATUS FOR ENHANCING THERMAL STABILITY,  
IMPROVING BIASING AND REDUCING DAMAGE FROM ELECTROSTATIC  
DISCHARGE IN SELF-PINNED ABUTTED JUNCTION HEADS HAVING  
SELF-PINNED LAYER EXTENDING UNDER THE HARD BIAS LAYERS**

5

ABSTRACT

A method and apparatus for enhancing thermal stability, improving biasing and reducing damage from electrical surges in self-pinned abutted junction heads. The head includes a self-pinned layer, the self-pinned layer having a first end, a second end and  
10 central portion, a free layer disposed over the central portion of the self-pinned layer in a central region and a first and second hard bias layers formed over the first and second ends of the self-pinned layer respectively, the first and second hard bias layer abutting the free layer, the first and second end of the self-pinned layer extending under the hard bias layers at the first and second ends.